

# Amendments to O. Reg. 153/04: RSC Submission Process and ESA Requirements

Presentation to APGO and PEO  
May 31, 2010

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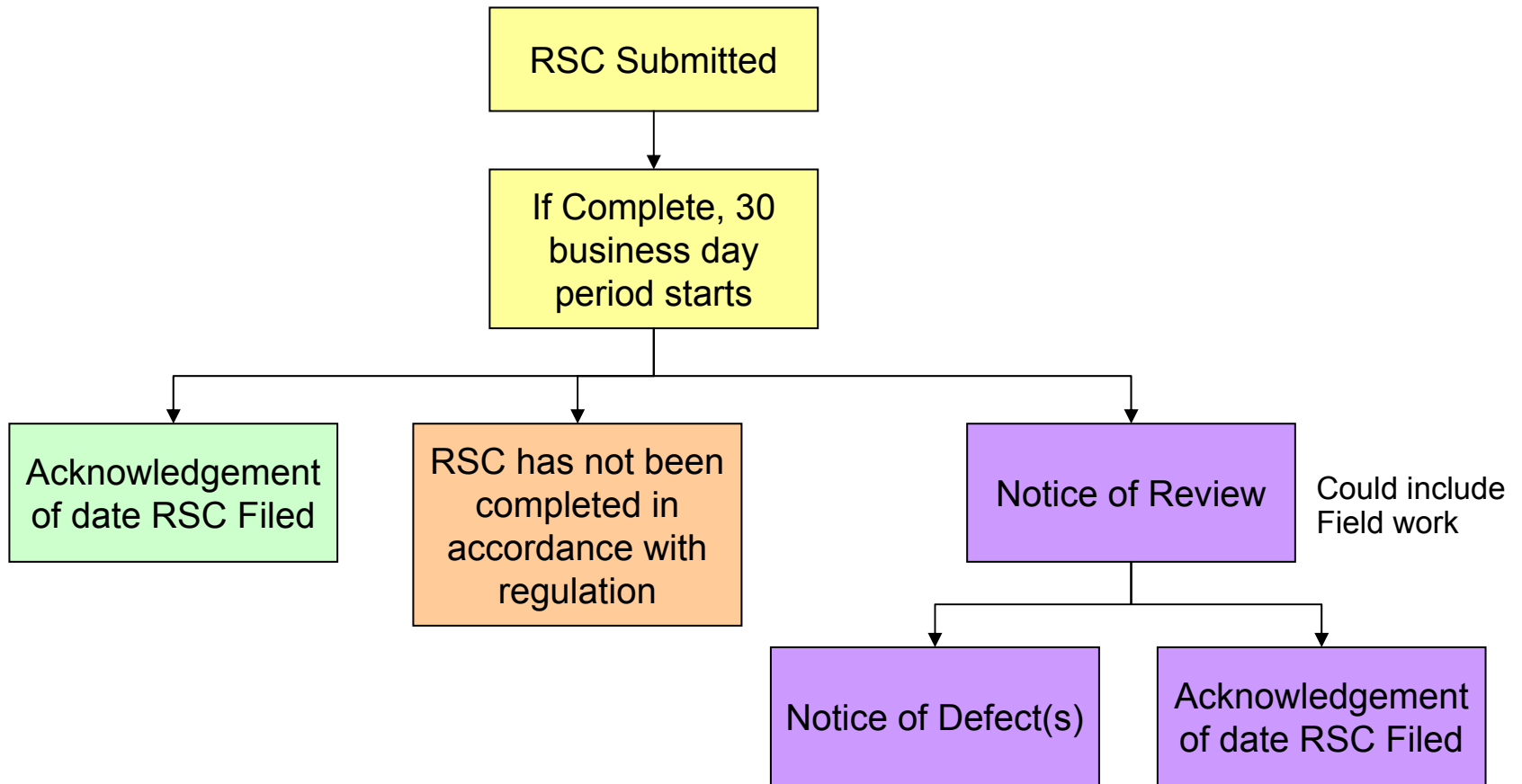
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# RSC Submission Process

# RSC Submission Process *(EPA s.168.4)*

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# RSC Submission Process

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- ▶ **Once a RSC is submitted for filing and is complete, the owner will receive a notice of receipt. Within the next 30 business days, the Director will do one of the following (*EPA s. 168.4(3.1)*):**
  - Provide acknowledgement of the date the RSC was filed.
  - Provide notice that the RSC cannot be filed because it has not been completed in accordance with the regulations.
  - Provide notice that a review in relation to the RSC will take place before the RSC can be filed.

# RSC Submission Process

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## ► Review

- A portion of RSCs submitted will be selected for a review.
- Most reviews will be reviews of reports, e.g., ESAs.
- Although there is no time limit for a review, the ministry will provide an initial estimate and will stay in touch with the owner and QP during the review and notify them if the estimate changes.
- Some reviews will involve, in addition to review of reports, field work.
- A review will be done before a RSC is filed.

# When Review Completed (*EPA s.168.4(3.3)*)

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- ▶ When a review is complete, the Director will either:
  - Provide an acknowledgment of the date the RSC was filed; OR
  - Give notice that a defect prescribed by the regulation has been found in relation to the RSC, and the RSC cannot be filed.

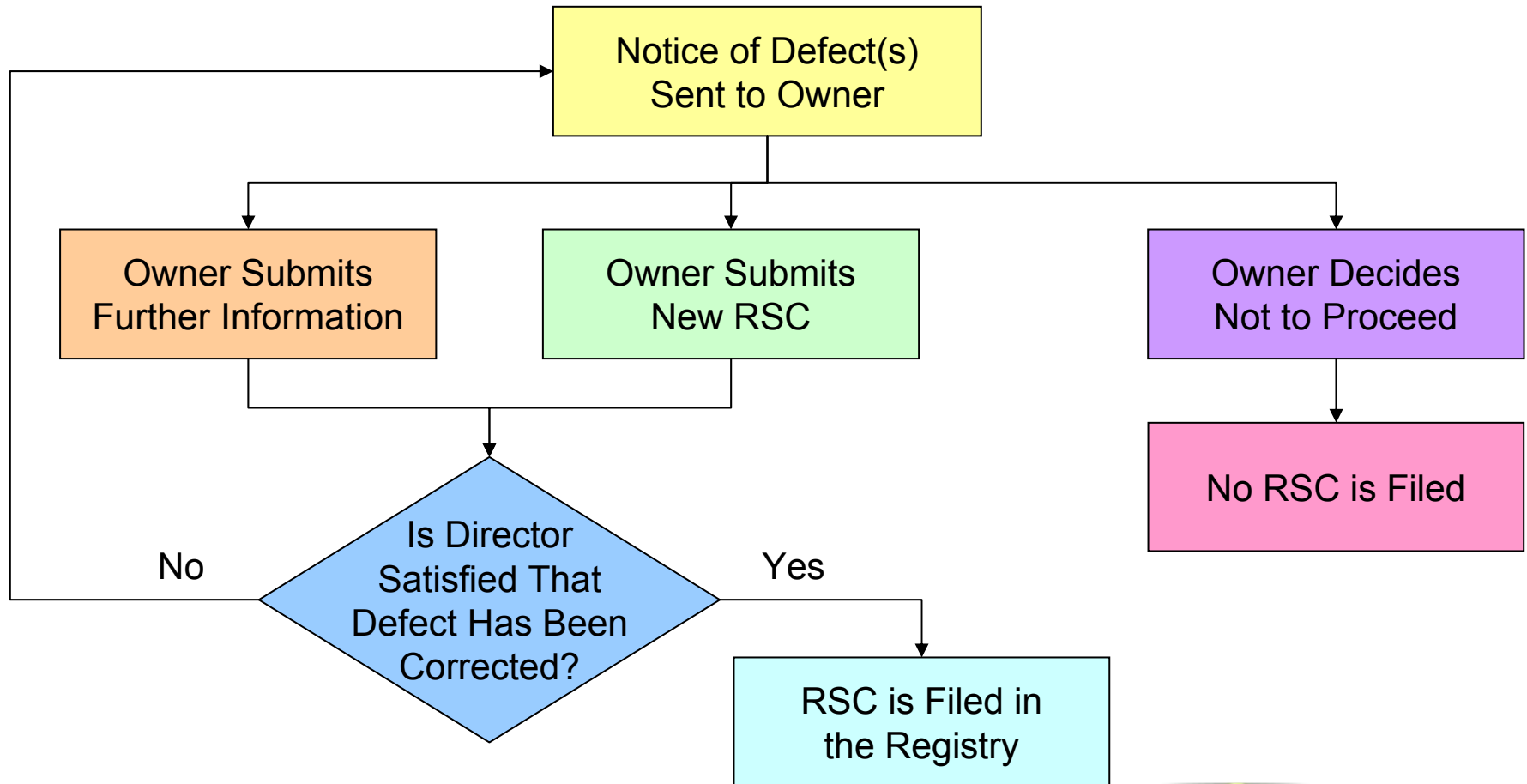
# Defects Prescribed by the Regulation

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- ▶ The following are defects prescribed by the regulation:
  - Failure to comply with a requirement of the regulation for a phase one or phase two ESA.
  - Failure to comply with a requirement for a phase one or phase two ESA because the manner in which it is addressed does not meet a general or specific objective of the ESA.
  - Failure to complete a RSC in accordance with the EPA or the regulation.

*(see s. 16.2(1) of the regulation)*

# Defects Prescribed by the Regulation





# Consequence of Finding a Defect Prescribed by the Regulation

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- ▶ In cases where a defect prescribed by the regulation is found, if the owner:
  - Submits a new RSC for filing; or
  - Submits further information or documents in relation to the original RSC; and
  - The Director is satisfied that, as a result of the submission, there is no defect associated with the RSC.
- ▶ The Director shall give an acknowledgment of the date the RSC was filed.
- ▶ The owner may also decide not to proceed further.

*(see EPA s.168.4(3.4))*

# RSC Submission Process

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- ▶ As now, RSCs will be submitted for filing via an electronic portal, accessible from the ministry's website.
- ▶ Direction on how to submit a RSC will be made available.
- ▶ The following documents must be attached to all RSCs submitted after July 1, 2011:
  - a certificate of status under the *Business Corporations Act*, or equivalent
  - a legal description of the property and description of ownership, prepared by a lawyer
  - a signed and sealed plan of survey (except for land administered under *Public Lands Act*) of any RA property, the phase one property, any phase two property, and the RSC property
  - a copy of any deed(s), transfer(s) or other document(s) by which the RSC property was acquired by the owner
  - a table of past and current uses
  - a conceptual site model

(see *Schedule A of the regulation and EPA s. 168.4(2) for contents of a RSC*)

# RSC Submission Process

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- ▶ Where a RSC is being submitted based on a phase one ESA alone, and soil has been brought to the RSC property to remain there after the RSC filing, the requirements of section 55 and Schedule F of the regulation must be met, and a certificate of analysis included with the RSC submission.
- ▶ Certain components of a RSC submission, such as the table of areas of potential environmental concern (APECs), will be completed online.

# Qualified Persons and ESAs

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- ▶ Phase one and phase two ESAs must be conducted in accordance with the regulation by or under the supervision of a qualified person (QP).
- ▶ There are several activities such as the review and evaluation component of an ESA that must be conducted by the QP.
- ▶ **Conflict of Interest:** If a QP or, where the QP is an employee, the QP's employer holds a direct or indirect interest in property that is the subject of a RSC, risk assessment or ESA, the QP may not:
  - Conduct or supervise a phase one or phase two ESA for that property or complete the certifications in a RSC filed with respect to the property; or
  - Prepare or supervise a risk assessment with respect to the property.

NB: this means employer/employee relationship, not consultant/client

*(see s. 6.1 of the regulation)*

# Responsibilities of Newly Retained QP

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- ▶ Provisions in-place to cover situations where the QP who conducted the ESA work is not the same QP who signs and makes certifications on the RSC.
- ▶ Ensures that the newly retained QP has taken the necessary steps to review any ESAs supporting the RSC filing before making the necessary certifications.
- ▶ The new rules require that the newly retained QP review the ESA to determine whether:
  - a) the ESA meets all the requirements of the regulation;
  - b) the phase one CSM accurately reflects the environmental condition of the property;
  - c) where there is a phase two ESA, the phase two CSM accurately reflects the environmental condition of the property prior to remediation; and
  - d) there is no new or materially changed APEC at the property.

*(see s. 30(1) of the regulation for phase one ESA RSCs; s. 33.7(1) for phase two ESA RSCs)*

# Responsibilities of Newly Retained QP

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- ▶ If the QP determines that further work necessary, the QP is required to conduct or supervise such work as may be necessary to achieve the general and specific objectives and requirements for the components of the ESA including the preparation of all or part of an ESA report, or update to the report, and the preparation of any documentary components of the report, such as the CSM.

*(see ss. 30(1), (2) and (3) of the regulation for phase one ESAs; ss. 33.7(1), (2) and (3) for phase two ESAs)*

# ***Questions?***

# New Rules for Completion of ESAs Supporting RSCs



# Rules for Phase One and Phase Two ESAs

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- ▶ There are new, detailed rules for phase one and phase two ESAs.
- ▶ There are components, general and specific objectives, and requirements for ESAs.
- ▶ The new rules were developed using existing standards from various jurisdictions, including standards set by the Canadian Standards Association, ASTM International and geoscience and engineering best practices in Ontario.
- ▶ **The new rules take effect on, and must be met for all RSCs submitted after July 1, 2011.**

# New Terms and Definitions

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► **Contaminants of concern:**

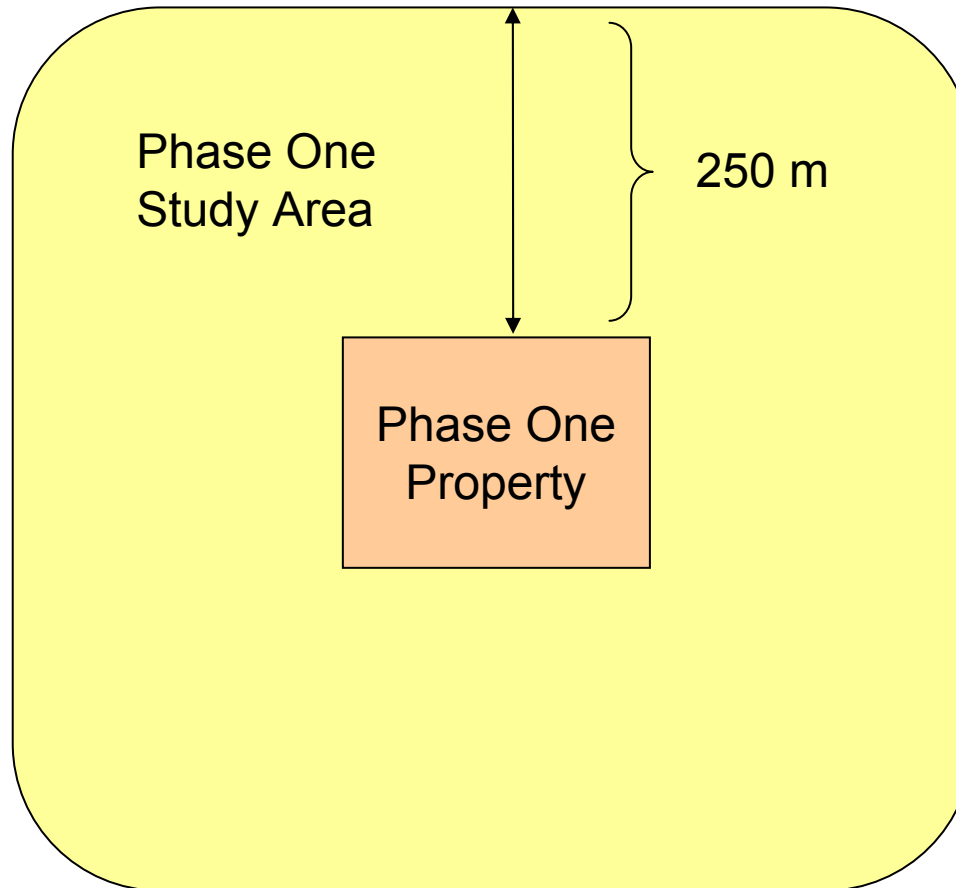
- (a) one or more contaminants found on, in or under a property at a concentration that exceeds the applicable site condition standards for the property; or
- (b) one or more contaminants found on, in or under a property for which no applicable site condition standard is prescribed under Part IX (Site Condition Standards and Risk Assessments) and which are associated with potentially contaminating activity.

► **Phase one study area:** the area that includes a phase one property, any other property that is located, wholly or partly, within 250 metres from the nearest point on a boundary of the phase one property and any property that the QP determines should be included as a part of the phase one study area.

*(see s. 1(1) of the regulation)*

# Phase One Study Area

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# New Terms and Definitions

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- ▶ **All reasonable inquiries:** a review of current and historical sources of reasonably accessible information about a property to determine uses and occupancies of the property since the property's first developed use (*see s. 22(1) of the regulation*).
- ▶ **Reasonably accessible if:**
  - the information is provided by an owner or other person to a QP or person supervised by a QP;
  - relevant information within the possession or control of any of the owners or persons funding the ESA;
  - information that is publicly available; or
  - information available from government sources through access to information legislation (*see s. 22(2) of the regulation*).
- ▶ **First developed use:** the earlier of:
  - the first use of a phase one property in or after 1875 that resulted in the development of a building or structure on the property; and
  - the first potentially contaminating use or activity on the phase one property.(*see s. 22(1) of the regulation*)

# New Terms and Definitions

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- ▶ **Area of potential environmental concern (APEC):** the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one ESA, including through:
  - (a) identification of past or present uses on, in or under the phase one property; and
  - (b) identification of potentially contaminating activity.*(see s. 1(1) of the regulation)*

# New Terms and Definitions

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- **Enhanced investigation property (EIP):** a property that is being used or has been used, in whole or in part, for an industrial use or for any of the following commercial uses:
- as a garage;
  - as a bulk liquid dispensing facility, including a gasoline outlet; or
  - for the operation of dry cleaning equipment. (see s. 22(1) of the *regulation*)
  - If the the property is currently used for an agricultural or other use, or a community use, an institutional use, a parkland use or a residential use, it is not an EIP if a RSC has been filed in the Registry since it was last used for an industrial or one of the specified commercial uses (see s. 32 of the *regulation*).

# New Terms and Definitions

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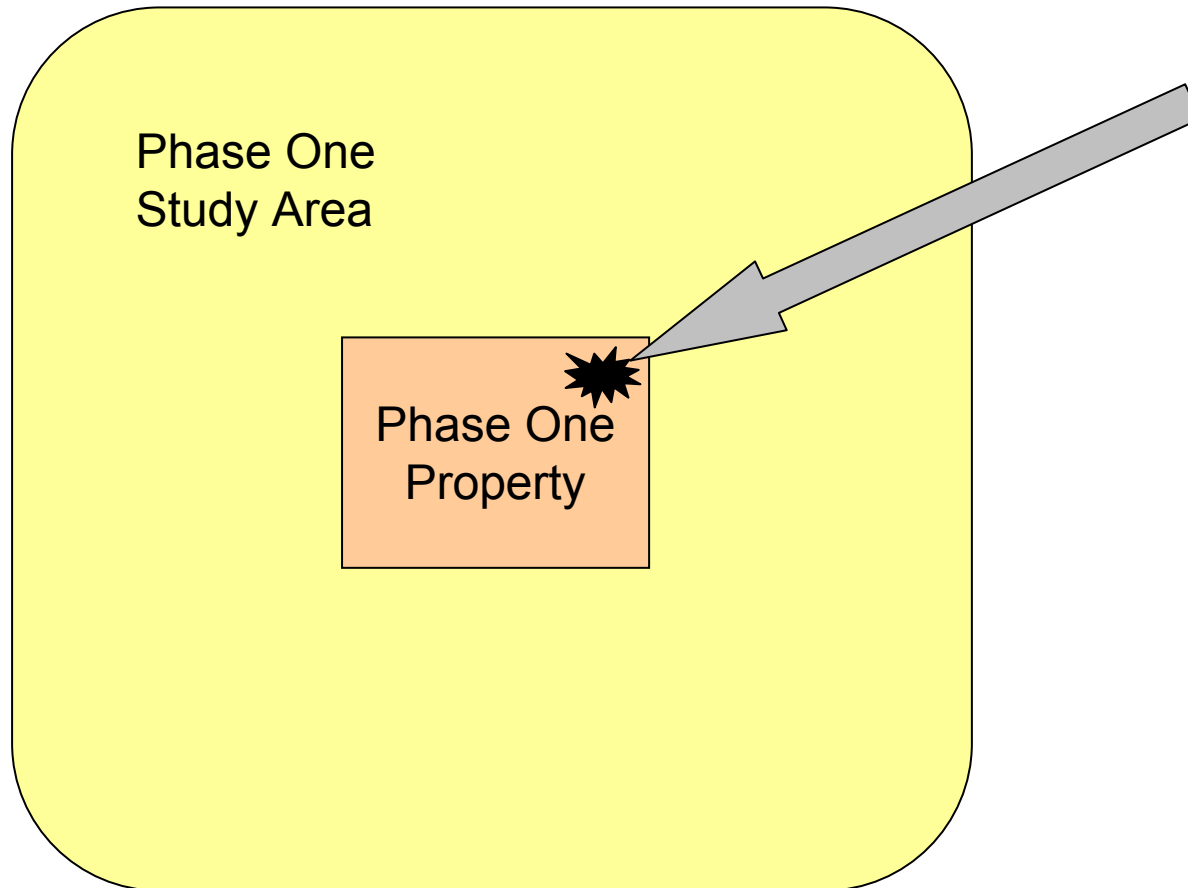
- ▶ **Potentially contaminating activity (PCA):** a use or activity as set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.  
(see s. 1(1) of the regulation)

If a PCA is found on the phase one property during a phase one ESA, a phase two ESA is mandatory.  
(see s. 32(1)(a) of the regulation)

If a PCA is found in the phase one study area during a phase one ESA, the QP must decide if the PCA could result in an APEC on the property, and determine if a phase two ESA is needed.

# APECs and PCAs

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**If there is a PCA on the property, a phase two ESA is required.**

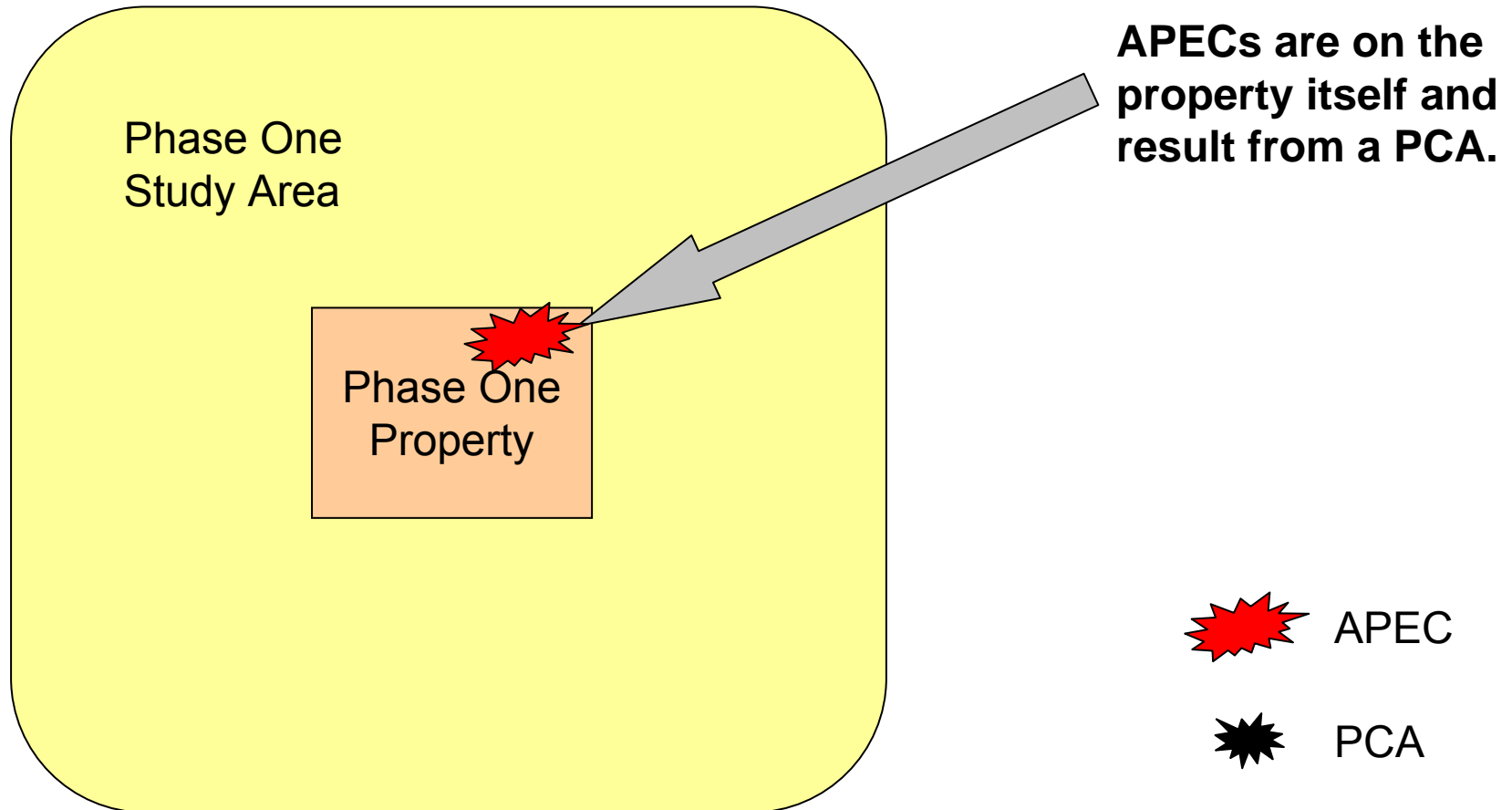
 APEC

 PCA



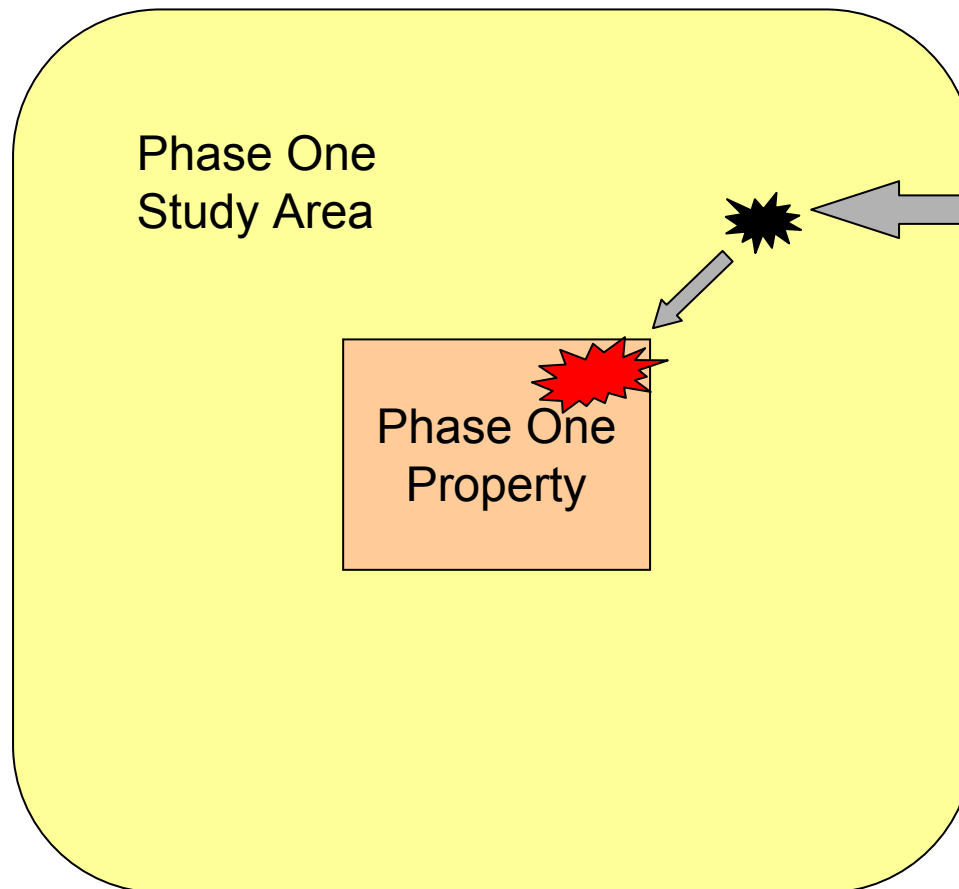
# APECs and PCAs

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# APECs and PCAs

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**If there is a PCA in the study area, QP must determine if PCA might result in an APEC on the property.**

 APEC

 PCA

# Table 2 of Schedule D: Potentially Contaminating Activities

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An excerpt from the table is set out below.

18.	Glass Manufacturing
19.	Landfilling
20.	Paint Manufacturing, Processing, Use, Bulk Storage, Handling or Disposal
21.	Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Use, Storage, Handling or Disposal
22.	Pharmaceutical Manufacturing, Processing or Storage
23.	Photographic Processing
24.	Plastics (including Fibreglass) Manufacturing, Processing, Storage and Disposal
25.	Rubber Manufacturing or Processing
26.	Soap or Detergent Manufacturing, Processing or Bulk Storage

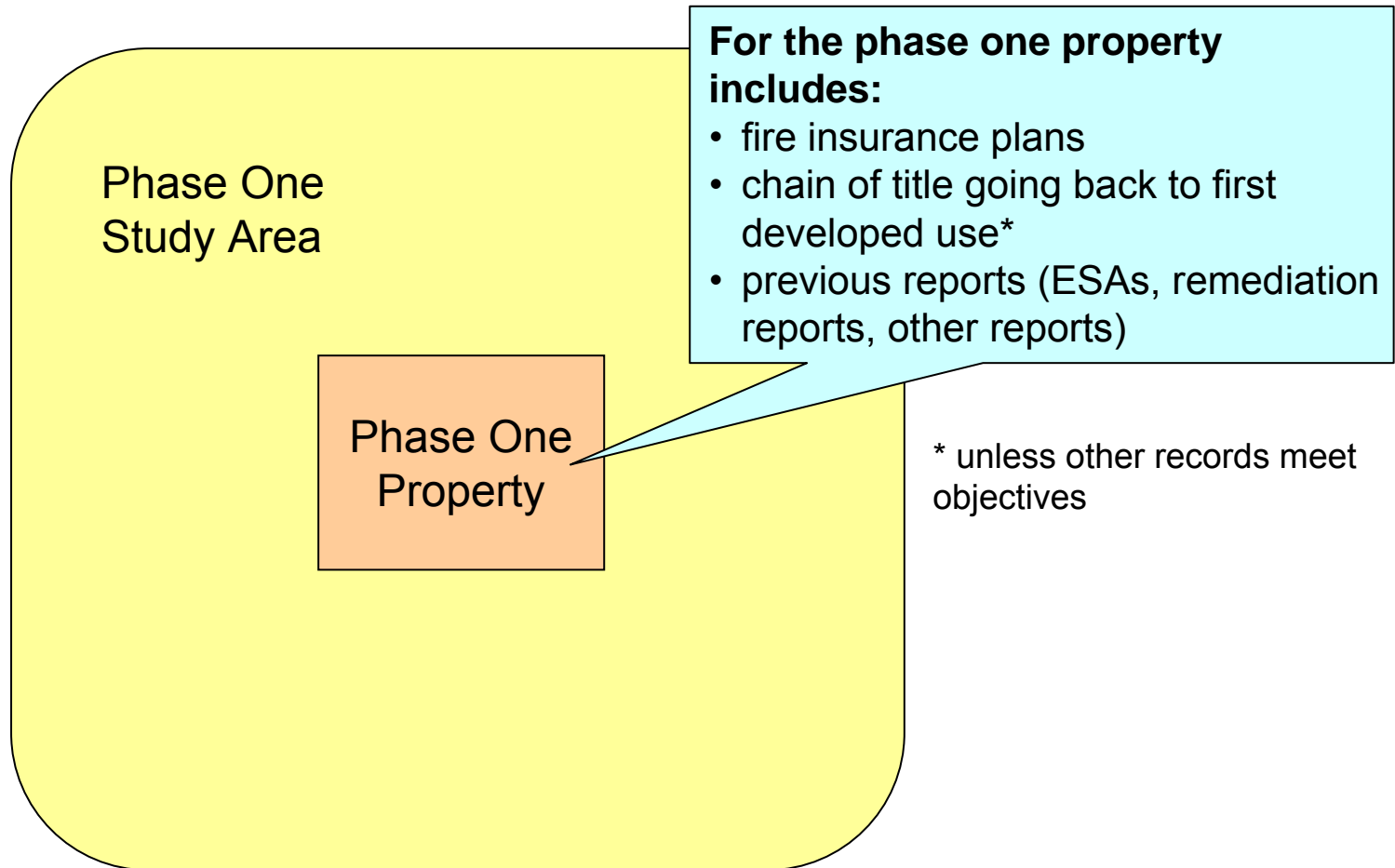
# Phase One ESAs

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- ▶ **Phase one ESA is:** an assessment of property conducted in accordance with the regulations by or under the supervision of a QP to determine the likelihood that one or more contaminants have affected any land or water on, in or under the property
- ▶ **General objectives of a phase one ESA include**
  - to provide preliminary information about environmental conditions in the land or water on, in or under the phase one property for the conduct of a risk assessment (if applicable)
  - to determine the need for a phase two ESA
  - to provide a basis for carrying out any phase two ESA
- ▶ **Components of a phase one ESA**
  - records review
  - interviews
  - site reconnaissance
  - evaluation of the information gathered
  - phase one ESA report
  - submission of the report to the owner of the phase one property

# Records Review

*(Schedule D, Part II)*



# Records Review

*(Schedule D, Part II)*

## For the phase one study area includes:

- NPRI database
- Notices and instruments, including RSCs posted in the Registry
- a series of aerial photographs
- retail fuel storage tanks information maintained by TSSA

## For the phase one property includes:

- fire insurance plans
- chain of title going back to first developed use\*
- previous reports (ESAs, remediation reports, other reports)

Phase One  
Property

\* unless other records meet objectives

# Records Review

*(Schedule D, Part II)*

## For the phase one study area includes:

- NPRI database
- Notices and instruments, including RSCs posted in the Registry
- a series of aerial photographs
- retail fuel storage tanks information maintained by TSSA

Phase One Property

## For the phase one property includes:

- fire insurance plans
- chain of title going back to first developed use\*
- previous reports (ESAs, remediation reports, other reports)

\* unless other records meet objectives

## For the phase one property and adjacent properties includes:

- records concerning incidents, orders, offences, spills and discharges
- waste management records

# Records Review

*(Schedule D, Part II)*

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- ▶ For enhanced investigation properties only, various site operating records are to be reviewed (see s. 3(2)14).



# Interviews

*(Schedule D, Part III)*

- ▶ There are now specific persons who must be interviewed as part of the phase one ESA. They are:
  - a current owner or a current occupant of the phase one property, or an individual with control or authority over the owner or occupant (where the owner or occupant is not an individual); and
  - a key site manager for each use, where the phase one property is an enhanced investigation property and is currently being used for an industrial or one of the specified commercial uses.
- ▶ The QP shall make all reasonable efforts to ensure that additional persons are interviewed, e.g., all persons relevant to meeting the general and specific objectives of the phase one ESA.

*(see ss. 4 to 8 of Schedule D)*

# Site Reconnaissance

*(Schedule D, Part IV)*

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- ▶ The site reconnaissance occurs after the preliminary records review, and consists of an investigation of the phase one study area, including the phase one property on one or more occasions.

# Site Reconnaissance

*(Schedule D, Part IV)*

**For the phase one study area includes:**

Investigations of:

- potentially contaminating activity
- water bodies
- areas of natural significance

**For the phase one property includes:**

Investigations of and/or inquiries about:

- structures and buildings
- underground utility and service corridors
- areas where a potentially contaminating activity is occurring or may have occurred

Phase One Property

**For enhanced investigation properties, further investigations are required**

# Review and Evaluation of Information

## *(Schedule D, Part V)*

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- ▶ When records review, interviews and site reconnaissance have been completed, the QP shall review, evaluate and interpret the information and prepare:
  - a table of areas of potential environmental concern;
  - a table of current and past uses of the phase one property; and
  - a phase one conceptual site model.

**Note:** The review and evaluation is a particularly crucial step in the completion of a phase one ESA and, for that reason, the QP must conduct the work personally.

# Phase One Conceptual Site Model

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- ▶ When the records review, interviews and site reconnaissance have been completed, the QP shall review, evaluate and interpret the information and prepare a phase one conceptual site model with one or more figures, and a narrative that describes and assesses, among other things:
  - any areas where a PCA occurred on, or potentially affecting the phase one property has occurred;
  - any contaminants of potential concern;
  - the potential for any underground utilities, if any present, to affect contaminant distribution and transport;
  - available regional or site-specific geological and hydrogeological information; and
  - how any uncertainty or absence of information obtained in each of the components of the phase one ESA could affect the validity of the model.

*(see s. 7(iv) of Table 1, Schedule D)*

# Review and Evaluation of Information

## *(Schedule D, Part V)*

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- ▶ Upon reviewing and evaluating the information, the QP shall reach conclusions concerning:
  - the existence and location of any areas of potential environmental concern on, in or under the phase one property
  - the current and past uses of the phase one property
  - the likelihood that one or more contaminants have affected any land or water on, in or under the phase one property
  - the need for a phase two ESA before a RSC can be submitted for filing (*see s. 16(3) of the regulation*)

# Phase One ESA Report

*(Schedule D, Part VI)*

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- ▶ The phase one ESA report shall:
  - include the headings, sub-headings, appendices, references and figures as specified in Table 1 of Schedule D.
- ▶ The mandatory report sections are:
  1. Executive Summary
  2. Introduction
  3. Scope of Investigation
  4. Records Review
  5. Interviews
  6. Site Reconnaissance
  7. Review and Evaluation of Information
  8. Conclusions
  9. References
  10. Appendices

# Soil Brought to Property Where RSC Based on Phase One ESA Only

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- ▶ Soil must meet Table 1 Standards.
- ▶ Requirements include sampling and analysis of the soil before it is brought to the property, at a frequency of:
  - one sample per 160 cubic metres for the first 5,000 cubic metres; and
  - one sample per 300 cubic metres thereafter.
- ▶ Samples must be analyzed for contaminants that may reasonably be expected to be present in soil and QP needs to consider the property where the soil came from; the handling of the soil and any other relevant factors including PCA.
- ▶ The results that demonstrate the soil brought to a phase one property meets Table 1 Standards, must be submitted as part of the RSC submission.
- ▶ Soil brought to the property to be used solely to backfill an excavation or for final grading.

(see para. 2 of s. 55(3) and Schedule F of the regulation).



# Phase Two ESAs

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- ▶ **Phase two ESA is:** an assessment of property conducted in accordance with the regulations by or under the supervision of a QP to determine the location and concentration of one or more contaminants in the land or water on, in or under the property.
  
- ▶ **Phase two ESA is required if:**
  - during the phase one ESA, a potentially contaminating activity is identified on, in or under the property;  
(see s. 32(1)(a) of the regulation)
  
  - a property that is being used or has been used, in whole or in part, for an industrial use or for any of the following commercial uses:
    - as a garage;
    - as a bulk liquid dispensing facility, including a gasoline outlet; or
    - for the operation of dry cleaning equipment.(see s. 32(1)(b) of the regulation)

# Phase Two ESAs

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A phase two ESA is not required by s. 32(1) where:

- part of a property that is being used or has ever been used for:
  - quarrying to excavate consolidated or unconsolidated aggregate; or
  - that aspect of the production of oil and gas consisting of the presence of an oil well or gas well on, in or under the property (see s. 32(3) of the *regulation*).

In addition, a phase two ESA is not required by s. 32(1) where:

- the property is currently used for an agricultural or other use, or a community use, an institutional use, a parkland use or a residential use; and
- since the latest date on which the property stopped being used for any of the types of property uses described above, a RSC has been filed in the Registry (see s. 32(2) of the *regulation*).

# Phase Two ESAs

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## ► General objectives of a phase two ESA

- To determine the location and concentration of contaminants in the land or water on, in or under the phase two property
- To determine if standards for contaminants on, in or under the phase two property were met as of the certification date
- To obtain information about environmental conditions in the land or water on, in or under the phase two property necessary to undertake a risk assessment (if applicable)

## ► Components of a phase two ESA

- Planning a site investigation
- Conducting a site investigation
- Review and evaluation of the information gathered
- Phase two ESA report
- Submission of the report to the owner of the phase two property

*(The specific requirements and objectives of phase two ESAs are detailed in Schedule E)*

# Planning Site Investigation *(Schedule E, Part II)*

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In planning a phase two ESA investigation, the following requirements must be met:

- ▶ The QP shall assess information obtained during the completion of the phase one ESA, including the phase one conceptual site model.
- ▶ The QP shall ensure there is a sampling and analysis plan which:
  - includes a quality assurance and quality control program and among other things;
  - considers findings as to potentially contaminating activity, and contaminants of potential concern.
- ▶ Standard Operating Procedures shall be developed for investigation methods.

# Conducting the Site Investigation: Delineation

## *(Schedule E, Part III)*

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- ▶ Areas where a contaminant is present at a concentration greater than the applicable site condition standard for the contaminant must be delineated laterally and vertically for each contaminant present in soil, ground water, or sediment on, in or under the property.
- ▶ Delineation may be done either during the investigation or following any remedial activities, as appropriate (see s. 7(3), Schedule E).
- ▶ Sampling and analysis continue outward from the sampling location(s) at which an exceedance was found until samples that meet applicable site condition standards have been obtained both laterally and vertically. During delineation, the areas of highest concentration for each contaminant in each medium must be identified.

# Mandatory Ground Water Sampling

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- ▶ Ground water sampling is mandatory if the property is an enhanced investigation property.
- ▶ Ground water sampling is also mandatory where it is required or advisable to do so to achieve any of the objectives of, a phase two ESA or its components or any of the other provisions in the regulation or schedules (e.g., a phase two on a property that is not an enhanced investigation property but where there has been an activity on the property that may have impacted ground water).

*(see s. 6, Schedule E of the Regulation)*

# Ground Water Sampling

*(Schedule E, Part III)*

- ▶ New rules for ground water samples used to characterize and delineate the extent of contamination, including direction on:
  - sampling depth intervals
  - field filtering of metals samples (except for mercury and methyl mercury)
  - collection and analysis of cross-gradient and down-gradient samples where a sample exceeds site condition standards (*s. 16 of Schedule E*)
- ▶ For ground water samples used to demonstrate if the applicable site condition standard has been met or not:
  - ground water samples shall be collected from a monitoring well or equivalent professionally acceptable ground water collection method
  - the well must have been developed and purged appropriately
  - precautions must be taken to minimize potential for cross contamination or contamination through preferential pathways

# Ground Water Level and Flow Directions

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- ▶ Rules for determining ground water level and flow direction include:
  - taking into consideration temporal ground water level variations;
  - taking measurements whenever ground water sampling is undertaken, as well as at other times as appropriate; and
  - measuring ground water levels in, at minimum, three monitoring wells, not placed in a straight line, in each aquifer to be investigated.

*(see ss. 22 and 23 of Schedule E)*



# Soil Sampling –

## Characterization and Delineation (*Schedule E, Part II*)

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- ▶ Soil samples used for characterization or delineation shall be collected from undisturbed soils.
- ▶ When selecting soil samples for analysis, in order to ensure the samples analyzed are representative of the maximum concentration in each area of the phase two property, the following must be considered:
  - Any evidence of the presence of a contaminant.
  - The maximum concentrations of a contaminant
    - measured using field screening equipment; AND
    - any other field screening means necessary.

*(see ss. 17 and 21, Schedule E)*

# Analytical Protocol

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- ▶ Samples of soil, ground water and sediment to be analyzed in accordance with the revised Analytical Protocol. Several requirements in the regulation to ensure consistency of laboratory reporting, and responsibility of QP to ensure that complete laboratory reports of analysis are part of the phase two ESA report (*see s. 47 of the regulation*).
- ▶ The Analytical Protocol was revised with input from several laboratories across the province.
- ▶ Sample hold times, containers and laboratory methodologies are specified in the Analytical Protocol.
- ▶ Information regarding the condition of the samples upon delivery to the laboratory, whether holding times were met, etc., are to be included in the laboratory reports of analysis.

# Soil Brought to Property Where RSC Based on Phase One and Phase Two ESA

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- ▶ Soil meets the applicable generic standards **or** standards specified in an approved Risk Assessment that includes a soil management plan.
- ▶ Soil that did not originate at a RSC property may be brought from another property to a RSC property provided:
  - the property is being used or has been used, in whole or in part, for an industrial use or a specified commercial use (garage, bulk liquid dispensing facility, or operation of dry cleaning equipment);
  - a potentially contaminating activity has been identified as occurring or having occurred;
  - the property is not currently being used for an agricultural or other use, or a community use, an institutional use, a parkland use or a residential use in a situation where a RSC for such use has been filed after the property was last used, in whole or in part, for an industrial use or specified commercial use (garage, bulk liquid dispensing facility, or operation of dry cleaning equipment);
  - one or more contaminants of concern have been identified as present.

If the above conditions do not all exist, soil brought to the RSC property must meet Table 1 Standards.

# Soil Brought to Property Where RSC Based on Phase One and Phase Two ESA

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- ▶ Soil must be analyzed prior to being brought to the property.
- ▶ To verify soil brought to property meets applicable standards, samples shall be analyzed at a rate of:
  - one per 160 cubic metres for the first 5,000 cubic metres; and
  - one per 300 cubic metres of soil in excess of 5,000 cubic metres.
- ▶ Soil must meet the applicable site condition standards or standards specified in a risk assessment for the property to which the soil is brought, provided the risk assessment includes a soil management plan (*see s. 32 of Schedule E*).
- ▶ Soil brought to a phase two property shall be used solely to backfill an excavation or for final grading.
- ▶ Details concerning soil brought to property can be found in s. 55 of the regulation, in ss. 30 to 34 of Schedule E, in subheading 10(c)(i) of Table 1 of Schedule E, and in Schedule F.

# Confirmation Sampling and Analysis

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- ▶ To confirm the effect and effectiveness of any remediation, confirmatory samples must be taken during and following any remedial activities.
- ▶ When conducting confirmatory sampling, requirements include:
  - Samples shall be collected and analyzed from locations and depths where a contaminant was present before remediation at a concentration in excess of standards.
  - Samples taken from monitoring wells into which material was introduced for purposes of remediation cannot be used to confirm the effect or effectiveness of remediation, or to demonstrate that the phase two property meets standards.
  - Where an excavation has been undertaken, confirmation samples must be collected and analyzed from each wall and floor.

*(see ss. 39 and 40, Schedule E)*

# Confirmation Sampling and Analysis

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- ▶ If standards have not been exceeded in ground water prior to remediation, there is no requirement to sample ground water following remediation.
- ▶ If standards have been exceeded in ground water prior to remediation, the effect and effectiveness of remediation must be verified through the collection and analysis of additional ground water samples following the last remedial activities.
  - Four consecutive quarterly ground water sampling events, the first of which is conducted a minimum of 90 days after the last remedial action (where all results are less than the applicable site condition standards or any standards specified in a risk assessment for all contaminants analyzed) are required where in situ remediation methods have been used. It means a minimum of 12 months before submitting a RSC for filing.
  - Two consecutive quarterly ground water sampling events, the first of which is conducted a minimum of 90 days after the last remedial action (where all results are less than the applicable site condition standards or any standards specified in a risk assessment for all contaminants analyzed) are required where remediation is not in situ. It means a minimum of 6 months before submitting a RSC for filing.

*(see s. 40, Schedule E)*

# Phase Two Conceptual Site Model

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- ▶ Once the site investigation has been completed, the QP shall personally review, evaluate and interpret the information and prepare a phase two conceptual site model that shows, among other things:
  - the location and extent of any areas of potential environmental concern,
  - the location of any subsurface structures and utilities,
  - various physical characteristics (e.g., hydrogeological conditions, approx. depth to bedrock),
  - any areas where soil has been brought to the phase two property, and
  - any areas where a contaminant is present at a concentration in excess of the applicable site condition standard.

*(see s. 43, Schedule E)*

# Phase Two Conceptual Site Model

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- ▶ Where a contaminant is present at a concentration greater than the applicable site condition standard, the conceptual site model must include:
  - diagrams, cross-sections and figures; and
  - narrative, including explanation of the contents of the diagrams, cross-sections, and figures and the logical bases for the interpretations and the scientific processes that account for the contaminant distribution.
- ▶ For each area where a contaminant is present at a concentration greater than the applicable site condition standard, the phase two conceptual site model shall include a diagram identifying, with narrative explanatory notes:
  - the release mechanisms;
  - contaminant transport pathway;
  - human and ecological receptors;
  - receptor exposure points; and
  - routes of exposure.

*(see ss. 7, 8 & 9, Schedule E)*



# Modified Generic Risk Assessment

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- ▶ If an owner wishes to submit a modified generic risk assessment (MGRA), the QP must ensure that an assessment is carried out (pursuant to Table 4 of Schedule E) with respect to any of the assumptions in the Approved Model which are to be modified. The assumptions include:
  - fraction of organic carbon
  - distance to nearest down-gradient water body
  - depth to highest water table
  - hydraulic conductivity
  - other parameters, as laid out in Table 4 of Schedule E
- ▶ The assessment must meet objectives and minimum requirements of Table 4. The QP reports on these in an appendix to the phase two ESA report.
- ▶ Details on the information needed to support an MGRA will follow.

# Dos and Don'ts

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## ► DO

- Collect ground water samples from monitoring wells and other equivalent professionally acceptable ground water collection method and not from a test pit, excavation, borehole, undeveloped monitoring well, or any other similar source.
- Analyze all soil before bringing it to an RSC property.
- Collect soil samples using professionally acceptable sampling methods.
- Field filter ground water samples to be analyzed for metals, except mercury and methyl mercury.

## ► DO NOT

- Collect ground water samples from wells into which material has been introduced for the purposes of remediation.

# The Phase Two ESA Report

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- ▶ The phase two ESA report shall:
  - be divided into sections and include the headings and sub-headings as set out in Table 1 of Schedule E (as applicable).
- ▶ The required report sections, as laid out in Table 1 of Schedule E are:
  1. Executive Summary
  2. Introduction
  3. Background Information
  4. Scope of the Investigation
  5. Investigation Method
  6. Review and Evaluation
  7. Conclusions
  8. References
  9. Figures and Tables
  10. Appendices

# Appendices

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► Appendices include:

- Sampling and analysis plan
- Finalized field logs
- Certificates of analysis and analytical reports
- Details concerning residue management
- A plan of survey of the phase two property
- Details of any remediation, remedial actions, free flowing product and confirmation sampling and analysis
- Details concerning soil excavated at or brought to the phase two property
- Information collected to support the filing of a MGRA

*(see Table 1, Schedule E for details of the appendices)*

# Use of ESA Reports

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- ▶ Important to ensure that the ESA reports that form the basis of the RSC accurately reflect the condition of the property at the time of submission (i.e., are not out of date), and that the ESA reports meet all of the requirements of the regulation.
- ▶ An ESA report may be used by a QP in a RSC or as the basis for further work (e.g., for a phase two ESA or for a risk assessment) if:
  - in the case of a phase one ESA, the date the last work on the records review, interview and site reconnaissance, and in the case of a phase two ESA, the date the last work on planning and conducting the investigation and reviewing and evaluating the information, was less than 18 months prior to the RSC being submitted or the commencement of other work (i.e., a phase two ESA or a risk assessment);
  - in the professional opinion of the QP, there is no new or materially changed APEC;
  - the ESA meets all other requirements, including the reporting requirements;
  - the report is a single document; AND
  - the report is the most recent document that meets the requirements for that type of ESA report to be used for submitting RSC for filing.

# Use of ESA Reports

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- ▶ If it has been greater than 18 months before the RSC was submitted or further work was commenced,  
OR  
the ESA does not meet the general objectives or the specific objectives and requirements as set out in Schedules D and/or E,
  - the QP shall update the ESA by conducting or supervising such further portions of an ESA as may be necessary to achieve:
    - the general objectives, and
    - the specific objectives and requirements as set out in Schedules D and/or E.
- ▶ In this situation, the ESA report will consist of two or more documents (the original ESA and the update to the ESA). Between these two documents, all requirements including the requirements for ESA reports must be fulfilled and, any new or materially changed APEC at the property has to be covered in the update.

# ***Questions?***